BAAQMD

HEALTH RISK SCREENING ANALYSIS

ChevronTexaco
1656 Foxworthy Avenue
San Jose, CA 95124

4 November 2004

SUMMARY

This document contains the health risk screening assessment prepared for Chevron Environmental Management (ChevronTexaco) facility (plant 16289), located at 1656 Foxworthy Avenue in San Jose, California. As a routine part of the evaluation of a permit application, the Bay Area Air Quality Management District (BAAQMD) prepared this screening risk assessment.

On behalf of ChevronTexaco, SECOR International Inc. (SECOR) plans to operate a soil vapor extraction and treatment system at this location. This is a system which is designed to clean up gasoline (or hydrocarbon) contaminated soil. Projects such as this typically operate from 6 months up to several years. Once the soil is cleaned up the project is shutdown and equipment dismantled. In order to operate the soil vapor extraction project, the facility must get a permit from BAAQMD. Benzene, a toxic air contaminant and a carcinogen, will be emitted during operation of the facility. BAAQMD staff, as a part of the permit review process, evaluates the possible impact of the benzene emissions that will occur with the operation of the facility.

Operation of this equipment will result in emissions of pollutants into the atmosphere, and so the facility must get a permit from BAAQMD. Benzene, a toxic air contaminant and a carcinogen, will be emitted during operation of the equipment. BAAQMD staff, as a part of the permit review process, evaluated the possible impact of the benzene emissions that will occur as a result of the operation.

The benzene impact is expressed in terms of the increased risk of contracting cancer by individuals who live in the impact area. The proposed operation would result in an increased maximum risk of no more than 1.2 chances in a million to anyone who works or lives near the facility. For the students who attend Challenger School, the maximum risk from the proposed operation is 24 chances in a billion. These results are presented in Table 1.

The screening methods used by BAAQMD to estimate risk are based on a "worst-possible" estimate of the operating conditions for the facility. This type of analysis is considered to be health-protective.

TABLE 1

Executive Summary **Carcinogenic Risks**

Maximum Cancer Risk		
Residential Receptor	**Industrial Receptor**	**Challenger School**
1.2 chance in a million	1.1 chances in a billion	24 chances in a billion

(The estimates of residential risk assume that individuals are in continuous residence during a 70-year lifetime. Estimates of industrial risk assume that an off-site worker is exposed 8 hours/day, 240 days/year for 46 years. The estimates of risk at the school assume that children are in attendance 10 hours/day, 180 days/year, for 9 years.)

School address: Challenger School
2845 Meridian Avenue
San Jose, California 95124

g**Risk Screening Assessment for AN 10400, ChevronTexaco Station 9-4793**

I. Introduction

The BAAQMD Staff Risk Management Policy (May 9, 1991) states that a written risk screening analysis is to be prepared for any application for a new source of toxic emissions, or for any application for increased toxic emissions from a modified existing source.

II. Facility Description

Plant Name:	ChevronTexaco c/o SECOR
Location:	5835 Thornton Avenue Newark, CA 94560
Type of Operation:	Soil Vapor Extraction System
Plant #:	16287
Application #:	10400

III. Exposure Assessment

The toxic air contaminant of concern at this facility is benzene, a carcinogen. Benzene is emitted as a result of the soil vapor extraction process. The estimated emission rate and annual emissions of benzene that can be expected from this operation are shown in Table 2.

Ambient air concentrations of benzene were predicted using the ISCST3 air dispersion computer model. This model uses information about the facility and the emission rates of toxic air contaminants to estimate what concentrations would be expected in the air around the site. The estimated maximum concentrations of benzene are shown in Table 3.

IV. Risk Assessment

The estimated concentrations of benzene are used to calculate the possible carcinogenic risks that might be expected to arise from these exposures. The results are presented in Table 4. In the case of benzene, the risk is due solely to inhalation exposure.

These potential risk values were calculated using standard risk assessment methodology. They include the assumptions that residents are present in their homes 24 hours/day, 7 days/week for 70-years; off-site workers are present 8 hours/day, 240 days/year for 46 years; and the school is occupied for 10 hours/day, 180 days/year, for 9 years.

The risk values are based in part on the "best estimates" of plausible cancer potencies as determined by the California Office of Environmental Health Hazard Assessment (OEHHA). The actual value of risk, which cannot be determined, may approach zero.

TABLE 2

Pollutant Emissions

Pollutant	Maximum Emission Rate (gm/sec)	Maximum Annual Amount (lb/year)	Source of Emission(s)
Benzene	5.25 E-04	36.5	Soil Vapor Extraction and Treatment system

TABLE 3

Annual Average Benzene Concentration in Ambient Air (μg/m^3)

Maximum Residential Exposure	Maximum Industrial Exposure	Challenger School Exposure
4.1 E-02	2.7 E-01	1.6 E-02

TABLE 4

Individual Carcinogenic Risk Resulting from Inhalation Exposure to Benzene

Maximum Residential Exposure	Maximum Industrial Exposure	Challenger School Exposure
1.2 chances in a million	1.1 chances in a million	0.024 chances in a million